

CalPERS **Economic Impacts** in California

July 2017

This study reflects impacts for the fiscal year ending June 30, 2016.

CalPERS benefit payments and investments in California are **essential** to the state's economy.

Benefit Impacts

\$20.9 billion

Economic activity generated from CalPERS benefit payments

page 7

\$850.6 million

Taxes generated from CalPERS benefit payments

page 7

\$1.7 billion

Supports California's real estate sector

page 8

Investment Impacts

\$27.3 billion

CalPERS investments in California

page 13

145,000

California jobs supported by CalPERS real estate portfolio

page 15

59%

California private equity investments in high minority areas

page 16

Contents

Introduction 3

Economic Structure of California 4

Statewide Impact of CalPERS Benefit Payments. 6

Tax Revenue 7

Revenues by Industry 8

Jobs Supported by Industry 9

Regional Impacts 10

Overview of CalPERS Investments in California 13

Jobs Supported by CalPERS Investments 13

CalPERS California Initiative 17

Summary 17

Introduction

The California Public Employees’ Retirement System (CalPERS) is the nation’s largest defined benefit public pension fund, providing retirement benefit services to more than 1.8 million members. As of June 30, 2016, CalPERS provided ongoing monthly retirement benefit payments (benefit payments) to 650,943 retirees, beneficiaries, and survivors (benefit recipients). Roughly 85 percent of these benefit recipients resided in California. Defined benefit plans, such as CalPERS, not only provide benefits, but also contribute substantially to the local economy. This study focuses on CalPERS benefit recipients residing in California and estimates the economic impacts of CalPERS benefit payments.

Over the past two fiscal years, CalPERS faced unstable financial markets, a maturing workforce, rising retiree population, and longer life expectancies. As of June 30, 2016, CalPERS’ investment portfolio totaled \$295.1 billion, a decrease of 2.3 percent from the previous year.¹ Despite these challenges, CalPERS continues to stimulate the California economy by providing benefit payments to more than 562,000 benefit recipients in California and investing \$27.3 billion throughout the state (as of June 30, 2016). This money provides several ancillary benefits throughout the state’s economy.

CalPERS recently conducted economic impact analyses to estimate the economic impact of CalPERS benefit payments on income, employment, and investments in fiscal year (FY) 2015-16.² This document summarizes findings from the analyses.

Economic Structure of California

According to the International Monetary Fund (IMF), California's economy was equivalent to the sixth largest in the world in 2015. When comparing the growth rate across nations, California's economy grew at a rate of 4.5 percent from 2015 to 2016, which was greater than China (the 2nd largest economy).³

Top 10 National and State Gross Domestic Product (GDP) Levels and Growth Rates, 2015

	GDP, in billions*	Growth Rate, 2015 to 2016
US**	15,523	3.2%
China	11,008	3.6%
Japan	4,123	7.0%
Germany	3,358	3.3%
United Kingdom	2,849	-3.1%
California***	2,458	4.5%
France	2,422	1.8%
India	2,091	9.5%
Italy	1,816	1.8%
Brazil	1,773	-13.4%

*GDP in current dollars

** U.S. GDP excludes California

*** California GDP data from the U.S. Bureau of Economic Analysis (BEA). May 2017.

Source: Report for Selected Country Groups and Subjects. World Economic Outlook. IMF. April 2016.

As reported by the U.S. Bureau of Labor Statistics (BLS), in 2015, California's economy generated more than \$2.4 trillion in economic activity and supported more than 22.6 million jobs. California's labor force increased by 3.1 percent during the 2015 calendar year, averaging an unemployment rate of 6.2 percent, which is 2.7 percentage points lower than it was in 2013.⁴

Snapshot of California's Economy in 2015

Economic Structure of California

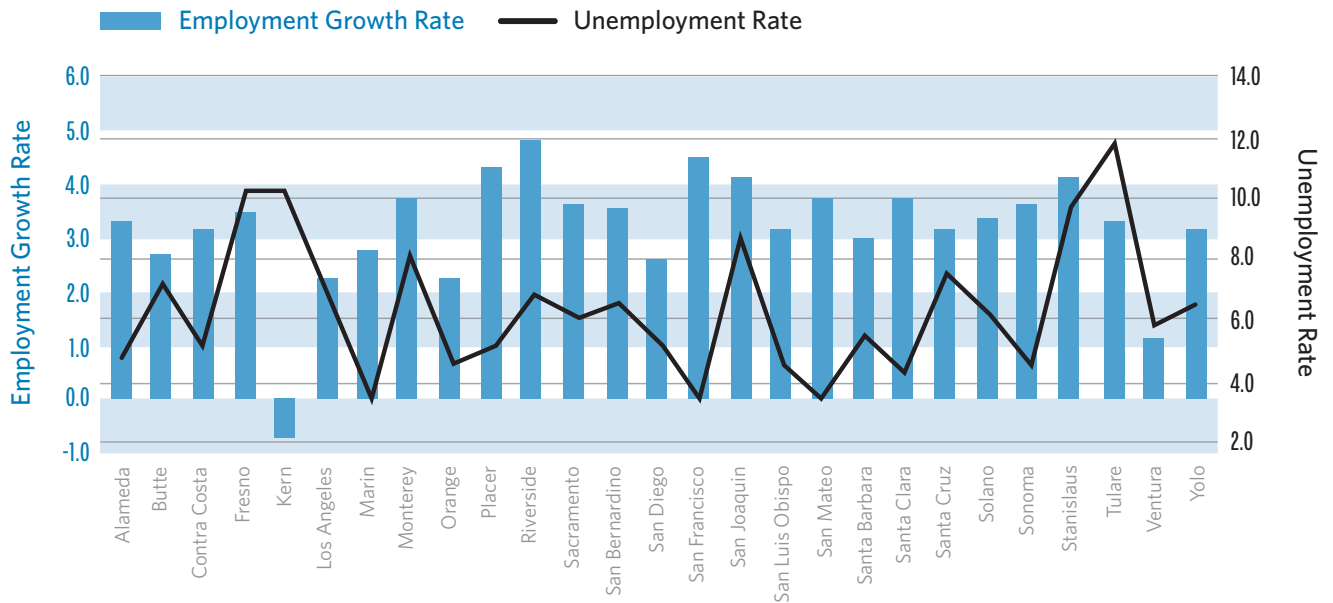
Gross Domestic Product (GDP)	\$2,458,092,270,147
GDP per Capita	\$62,795
Population	39,144,820
Employment	22,625,287
Average Worker Compensation	\$58,172

Source: IMPLAN Group, LLC, IMPLAN System

Despite this growth, the state continues to experience regional differences in economic recovery. Employment growth across California counties varies by the labor force size. The BLS found that of California's 58 counties, 27 had a labor force exceeding 750,000 workers as of December 2015. Overall, these 27 counties accounted for 93.1 percent of total employment within the state. Except for Kern County (-0.8 percent), employment in each of these counties increased. Riverside and San Francisco counties experienced the largest employment growth of 4.6 percent and 4.9 percent, respectively.⁵

When considering unemployment, two out of the 27 largest labor force counties had double-digit unemployment rates. Tulare County had the highest unemployment rate among the selected counties (11.7 percent) and ranked third among all 58 counties in California. Imperial County had the highest unemployment rate (24.0 percent) across all counties.⁶

California's 27 Largest Labor Force Counties, 2015



Source: *County Employment and Wages in California – Fourth Quarter 2015*: Western Information Office. U.S. Bureau of Labor Statistics.

Statewide Impact of CalPERS Benefit Payments

CalPERS benefit recipients provide a steady infusion of economic activity in California. Direct benefit payments represent an injection of income into the local economy, stimulating the economy through consumption, generating additional tax revenue, and supporting local jobs. In addition, CalPERS benefit payments provide a reliable income stream that plays a vital role in stabilizing the local economy during economic downturns.

The economy and benefit payments change at different rates, thus the relationship is dynamic and the economic impact of benefit payments depends on the relative rates of change. This study uses a static input-output model to estimate the economic impacts of CalPERS benefit payments. Input-output models provide a “snapshot in time” of how the economy is structured. They do not provide information on why the structure changed and what effect any change may have had on the aggregate economy. As a result, the estimated impacts represent fixed economic conditions and assumptions. Consequently, year-to-year comparisons of CalPERS economic impact studies are inappropriate because assumptions change and the economy is not static.

\$370 million

Property taxes generated from CalPERS benefit payments

In FY 2015-16, CalPERS paid \$17.4 billion in benefits to 562,239 California benefit recipients; \$20.3 billion was paid to all benefit recipients. IMPLAN estimates the \$17.4 billion benefits paid supported nearly 129,000 jobs throughout California and generated more than \$20 billion of economic activity across the state.

CalPERS Benefit Recipient Population and Benefit Payments

Benefit Recipient Summary	California	All ⁷
Number of benefit recipients	562,239	650,943
Average annual allowance	\$30,990	\$31,219
Annual retirement benefit payments	\$17.4 billion	\$20.3 billion

Source: my|CalPERS retirement benefit data, includes PERS, LRS, JRS, and JRS II (FY 2015-16)

Estimated Impacts of CalPERS Benefit Payments in California

Economic impact ⁸	\$20,982,500,882
Sales tax generated	\$480,914,681
Property tax generated	\$369,741,356
Employment supported	128,969

Source: Derived by IMPLAN using my|CalPERS retirement benefit data (FY 2015-16)

\$481 million

Sales tax revenue from CalPERS benefit payments

Tax Revenue

CalPERS benefit recipients generate sales tax revenue when they consume goods and services. CalPERS benefit recipients also provide a steady stream of property tax revenue, which is vital to California’s local communities. In FY 2015-16, IMPLAN estimates that CalPERS benefit recipients generated nearly \$481 million in sales tax revenue and \$370 million in property tax revenue.

\$1.7 billion

Real estate revenue generated from CalPERS benefit payments

Revenues by Industry

CalPERS benefit recipients generate business revenue in many industry sectors. In FY 2015-16, benefit payments generated the greatest economic impact in terms of revenues in the imputed rental activity for the owner-occupied dwellings sector. This sector captures the average rental income homeowners would receive if they rented their dwelling. Additionally, CalPERS benefit payments generated revenue totals of more than:

- \$1.7 billion in the real estate market
- \$1.3 billion for hospitals and physician offices

Top Ten Industry Sectors With Estimated Revenue Generated by CalPERS Benefit Payments

Top 10 Industry Sectors	Revenues	
Owner-occupied dwellings	\$1,800,507,932	
Real estate	\$1,717,160,889	
Wholesale trade	\$1,055,631,822	
Hospitals	\$723,971,679	
Other financial investment activities	\$557,309,648	
Offices of physicians	\$552,226,607	
Limited-service restaurants	\$501,347,966	
Religious organizations	\$473,819,884	
Monetary authorities and depository credit intermediation	\$467,076,775	
Wireless telecommunications carriers (except satellite)	\$459,616,571	

Source: Derived by IMPLAN using my|CalPERS retirement benefit data (FY 2015-16)

Jobs Supported by Industry

CalPERS benefit payments supported an estimated 128,969 jobs spanning many industries throughout the state. In FY 2015-16, the single job sector most affected by benefit payments was real estate. However, when combining similarly defined industry sectors, CalPERS benefit payments supported:

- 11,696 restaurant related sector jobs (9.1 percent of total jobs supported)
- 7,952 hospitals and physician offices jobs (6.2 percent of total jobs supported)
- 7,446 retail related industry jobs (5.8 percent of total jobs supported)

Top Ten Industry Sectors with the Estimated Number of Jobs Supported by CalPERS Benefit Payments

Real estate	7,388
Full-service restaurants	6,121
Limited-service restaurants	5,575
Individual and family services	4,260
Hospitals	4,046
Wholesale trade	3,984
Offices of physicians	3,906
Retail - General merchandise stores	3,801
Retail - Food and beverage stores	3,645
Other financial investment activities	3,070

Source: Derived by IMPLAN using CalPERS retirement benefit data (FY 2015-16)

128,969

Jobs supported by CalPERS
benefit payments

\$2.2 billion

Economic impact in Los Angeles County from CalPERS benefit payments

Regional Impacts

CalPERS benefit payments provide an infusion of economic stimulus throughout California; however, the overall impact of the benefit payments is not geographically uniform. Counties with larger Gross Regional Products (GRP) and concentrations of CalPERS benefit recipients tend to generate larger dollar economic impacts, while counties with smaller GRPs generate smaller dollar economic impacts.

Los Angeles County had the largest economy at \$663.23 billion GRP, the largest percentage of CalPERS benefit recipients, and the largest economic impact from CalPERS benefit payments at \$2.2 billion. Sacramento County experienced the second largest economic impact from CalPERS benefit payments at \$1.97 billion. Though these larger regions may experience greater total economic impact from CalPERS benefit payments, the relative economic impact may be less than those in smaller economies.

Total Economic Impacts of CalPERS Benefit Payments by Region

Region	County	Percent of CalPERS Benefit Recipient Population	Gross Regional Product (in billions)	Economic Impacts (in billions)
Southern California	Los Angeles	13.7	\$663.23	\$2.20
	Orange	6.0	\$237.17	\$1.29
	Riverside	6.6	\$73.13	\$1.14
	San Bernardino	5.5	\$76.65	\$0.85
Central Valley	Sacramento	10.0	\$79.52	\$1.97
Bay Area	Santa Clara	3.9	\$243.89	\$0.59
	San Francisco	0.8	\$143.12	\$0.12
	San Mateo	1.4	\$93.68	\$0.21
	Marin	0.6	\$20.96	\$0.11
Eastern Sierra	Calaveras	0.4	\$1.02	\$0.05
Northern	Shasta	1.3	\$6.15	\$0.24

Source: Derived by IMPLAN using my|CalPERS retirement benefit data (FY 2015-16)

On a per capita basis, counties with large GRPs tend to mitigate the economic impact of CalPERS benefit payments because the payments represent a smaller share of the county's overall economy. Understanding the relative nature of these estimated economic impacts is important because it illustrates which regions will have an actual boost in their economy.

Though Los Angeles and Sacramento counties have large GRPs, and the largest benefit recipient population and benefit payments, the relative impact of CalPERS benefit payments are more moderate when compared to smaller economies. For example, Calaveras County's GRP represents 0.4 percent of California's economy (ranked 49th out of all 58 counties). However, the average benefit payments make up a larger share of Calaveras County's economy, making the relative economic impact significantly greater than Los Angeles County. Moreover, the weighted economic impact per CalPERS benefit recipient to GRP per capita suggests that the economic impact of each additional benefit dollar increased GRP per capita by \$1.02 in Calaveras County, compared to \$0.44 in Los Angeles.

Economic impact of CalPERS benefit payments is greater in smaller economies

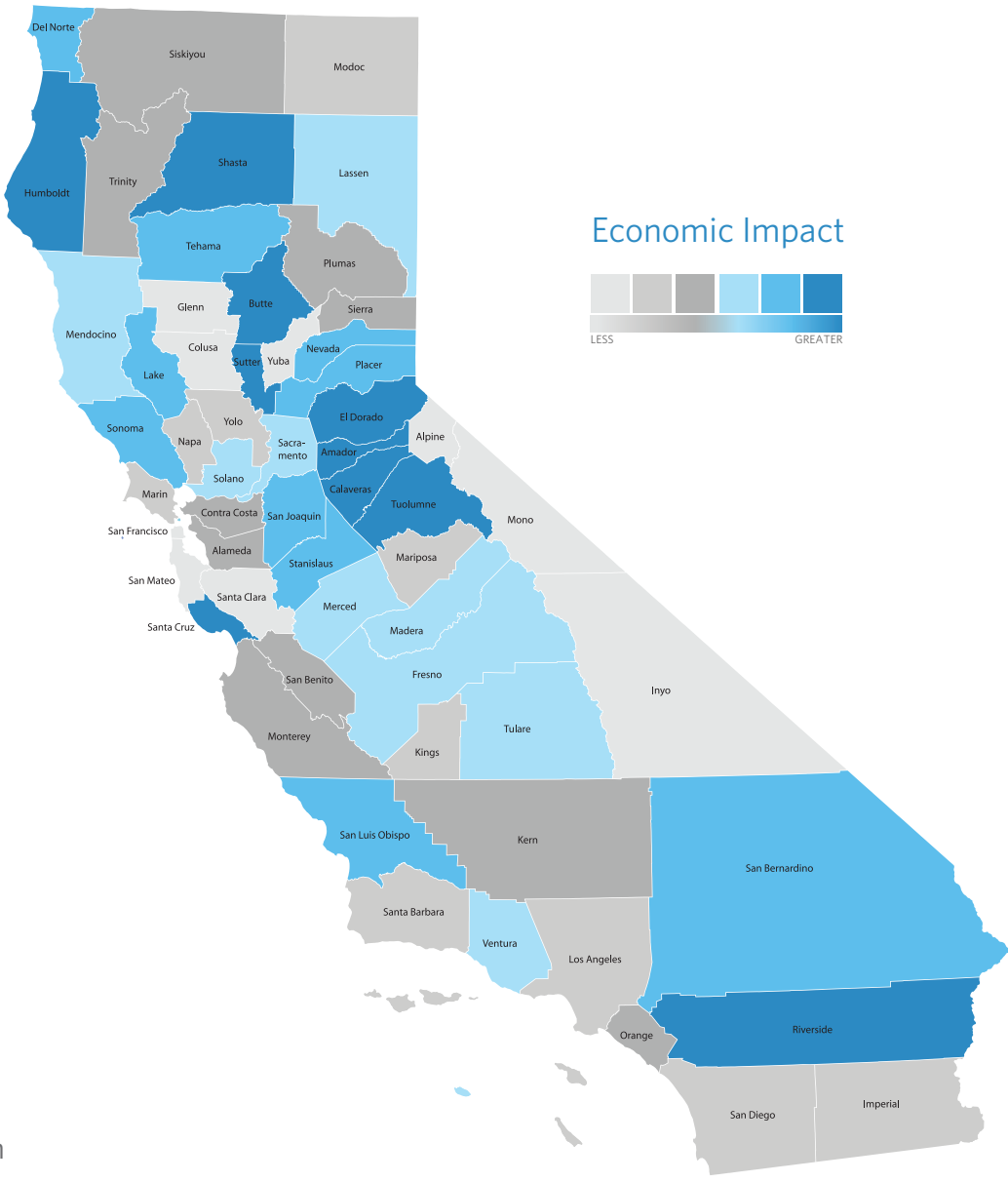
Relative Economic Impact of CalPERS Benefit Payments by County

County	Percent of CalPERS Benefit Recipient Population	Economic Impacts (in billions)	Gross Regional Product per Capita	Economic Impacts per Benefit Recipient relative to GRP per Capita
Calaveras	0.4	\$0.05	\$22,834	\$1.02
Riverside	6.6	\$1.14	\$30,972	\$0.99
Shasta	1.3	\$0.24	\$34,259	\$0.93
San Bernardino	5.5	\$0.85	\$36,018	\$0.76
Sacramento	10.0	\$1.97	\$52,966	\$0.66
Orange	6.0	\$1.29	\$74,823	\$0.52
Los Angeles	13.7	\$2.20	\$65,213	\$0.44
Marin	0.6	\$0.11	\$80,234	\$0.39
Santa Clara	3.9	\$0.59	\$127,155	\$0.21
San Mateo	1.4	\$0.21	\$122,441	\$0.21
San Francisco	0.8	\$0.12	\$165,489	\$0.17

Source: Derived by IMPLAN using my|CalPERS retirement benefit data (FY 2015-16)

CalPERS benefit recipients generate important economic impacts throughout the state. These benefits are particularly important in regions with less robust economies, such as Calaveras, Riverside, and Shasta counties. Recipients stimulate the economy in these regions by consuming goods and services which otherwise may not have been consumed.

Weighted Economic Impacts of CalPERS Benefit Payments by County



**Calaveras
Riverside
Shasta**

Counties with highest economic stimulus from CalPERS benefits

Source: Derived by IMPLAN using my|CalPERS retirement benefit data (FY 2015-16)

\$27.3 billion

CalPERS investments
in California

Overview of CalPERS Investments in California

CalPERS invests in California because of its vibrant and diverse economy. As of June 30, 2016, the CalPERS investment portfolio totaled \$295.1 billion. Investments in California accounted for approximately 9.3 percent, or \$27.3 billion, of CalPERS' portfolio.⁹

CalPERS' investment objective is to achieve an appropriate risk-adjusted return on investment. Investments in California, however, create additional ancillary benefits. These benefits include investments, jobs supported, and socially beneficial impacts.

CalPERS California Investments by Asset Class

Asset Class ¹⁰	Dollars Invested in CA (in billions)	Percent of Dollars invested in CA*
Global Equities ¹¹	\$13.3	8.7%
Global Fixed Income	\$3.3	5.5%
Private Equity	\$2.3	9.0%
Real Estate	\$8.0	29.0%
Infrastructure	\$0.35	13.3%

As of June 30, 2016

*The "Percent of Dollars in CA" represents the total dollars invested in CA relative to the total portfolio value of each asset class.

Jobs Supported by CalPERS Investments

Local job support is an important ancillary benefit of CalPERS California investments. CalPERS invests in California companies, which provide the indirect benefit of supporting California workers who stimulate the economy. These workers create economic activity in their local communities by purchasing goods and services.

However, the role that CalPERS' capital plays in sustaining the activities of a public company differs substantially from a private company or project. Specifically, CalPERS is one of thousands of capital providers to public companies, with an indirect connection to the activities of these businesses.

As such, total jobs figures for CalPERS' public markets and private markets are presented separately on the following pages, recognizing the different relationship between the capital CalPERS provides and employment outcomes.

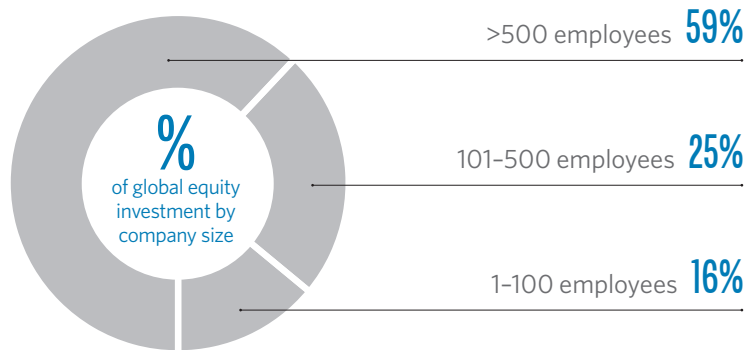
>1 million

California jobs supported by CalPERS public investment

Public Markets

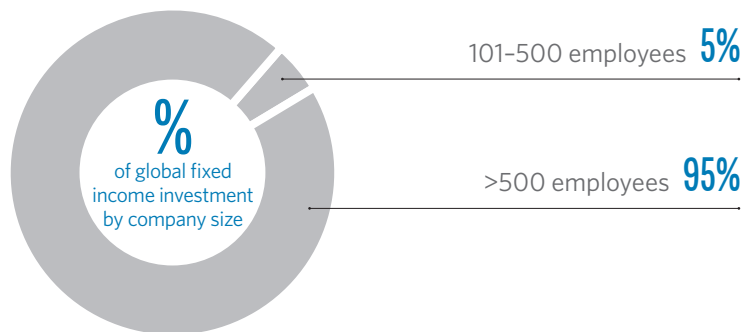
CalPERS invests in 589 California-headquartered public companies, which employ more than one million Californians. Twenty-two percent of these companies' facilities are located in California, which is higher than companies with headquarters outside of California (only four percent of their facilities are located in the state). Many of these public companies, such as Google, Apple, and Disney, are iconic to California.

Percentage of Global Equity Investment by Company Size



CalPERS global fixed income investments include \$762 million invested directly in 21 California-headquartered companies without the assistance of external third-party investment managers. These companies are larger in comparison to companies in other asset classes, with a median size of approximately 23,000 employees. Combined, these companies employ an estimated 268,000 workers and operate 2,400 local facilities in California.¹²

Percentage of Global Fixed Income Investment by Company Size



\$2.3 billion

Invested in 711 private companies in California

Private Markets

CalPERS private market investments include private equity, real estate, and infrastructure and can be more directly attributed to job creation and other ancillary benefits than investments in public markets. This is typically the case because CalPERS is a larger investor among a more targeted group of private market investors. CalPERS invests in 711 private companies in California that employ an estimated 113,000 workers. Approximately 29 percent of CalPERS total real estate investments are in California. The diverse real estate assets provide additional benefits to the local economy, including:

- Creation of construction jobs
- Construction-related economic activity
- New retail, industrial, and commercial opportunities
- Infusion of real assets into a community

CalPERS real estate investments support an estimated 145,000 jobs in California. Additionally, CalPERS real estate projects in the development and construction phase supported 14,000 jobs in California. The construction phase of CalPERS real estate projects not only provides direct benefits to the construction industry, they also provide indirect benefits to other workers throughout the state. As a result of the economic multiplier effect, construction workers create economic activity and support additional jobs when they consume goods and services where projects are located.

In addition to providing the ancillary benefit of job creation, CalPERS investments generate social benefits by providing capital to areas that have limited access to institutional private equity assets, such as geographic regions surrounding Silicon Valley. Private equity investment in California is highly concentrated, as approximately 95 percent of all private equity investment is in six percent of California's ZIP codes.¹³ Furthermore, CalPERS private equity investments are located in high minority, high unemployment, low-to-moderate income (LMI), and rural areas.¹⁴

113,000

California jobs supported by CalPERS private market investments

59%

Private equity investments
in high minority areas

Percentage of Investments and Dollars in These Areas

Area	Percent of Investments	Percent of Dollars
Limited Capital Access	14%	25%
High Minority	59%	60%
High Unemployment	3%	2%
LMI	29%	23%
Rural	4%	8%

Note: Many of the areas overlap, therefore, the percentages for each column exceeds 100 percent.

Infrastructure investment supports an estimated 4,400 jobs statewide. CalPERS invests \$345.7 million in infrastructure throughout California. More than 26 percent of this investment goes towards projects that provide water supplies to drought-prone areas. Infrastructure investments may serve as a catalyst for further job creation by having the potential to improve the transportation, energy, power and water sectors.

22,935

Jobs supported by CalPERS
California Initiative

CalPERS California Initiative

In 2001, CalPERS established the California Initiative to invest private equity in traditionally underserved markets, primarily in California. Since its inception, the California Initiative has invested over \$1 billion, with \$296 million currently invested in 113 active companies and supporting 22,935 jobs in 2016. The objective of the initiative is to generate financial returns that meet or exceed industry benchmarks. The initiative provides an ancillary benefit of providing capital to traditionally underserved markets.

Number of Jobs Supported and Created Since the California Initiative's Inception

Ancillary Benefits	Overall	Within California	Percent within California
Total Jobs Supported	176,559	40,947	23%
Total Jobs Created Since Investment ¹⁵	36,365	14,175	39%
Percentage of Job Growth Since Investment	26%	53%	N/A

Source: CalPERS for California 2016

Summary

CalPERS is the nation's largest defined benefit public pension fund, providing retirement benefits to more than 1.8 million members and ongoing monthly benefit payments to 650,943 retirees, beneficiaries, and survivors. CalPERS' benefit payments and investments in California are essential to the state's economy.

CalPERS' benefit payments generate economic activity that supports jobs and increases business and tax revenue. The stable and steady economic impacts are significant throughout the state but especially important in areas where the economy is less robust.

CalPERS' investments provide capital to many businesses headquartered in California. Additionally, CalPERS investments provide social and other ancillary benefits that are vital to the state.

Endnotes

- ¹ *CalPERS for California 2016*. p. 3. California Public Employees' Retirement System. June 2016. Assets reported in the CalPERS Comprehensive Annual Financial Report (CAFR), fiscal year ended June 30, 2016 stood at \$302 billion. p. 97.
- ² See Data and Methodology section.
- ³ "Report for Selected Country Groups and Subjects". *World Economic Outlook*. International Monetary Fund. n.p. April 2016. Web. 3 March 2017.
- ⁴ *State Employment and Unemployment Summary*. U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics. March 2017. Web. 30 March 2017.
- ⁵ *County Employment and Wages in California – Fourth Quarter 2015: Western Information Office*. U.S. Bureau of Labor Statistics. 27 July 2016. Web. 10 Mar. 2017.
- ⁶ Ibid.
- ⁷ These totals represent benefit payments of the Public Employees' Retirement System (PERS), the Judges' Retirement System (JRS), JRS II, and the Legislators' Retirement System (LRS). This figure does not include return of member contributions or refunds. CalPERS 2015-16 CAFR. pp.137-142. California Public Employees' Retirement System. June 2016.
- ⁸ The economic impacts represent the economic activity stimulated by the initial activity change (i.e., direct impact of CalPERS benefit payments). The money injected into the economy recirculates through the economy via household spending, stimulating economic growth. This study focuses on the induced economic impacts, not the total. The induced impacts represent the additional revenue generated from the direct impact (i.e., additional labor income, additional income generated through the purchase of goods and services, etc.).
- ⁹ *CalPERS for California 2016*. CalPERS. Sacramento, CA. June 2016. Print. 1 June 2017.
- ¹⁰ Definitions of the asset classes are listed below:

Asset Class	Definition
Public Equities	Investments in public companies domestically and internationally, for example through the New York Stock Exchange.
Private Equity	Investments in private companies that are not publically traded.
Real Estate	Investments in commercial, residential and industrial property.
Fixed Income	Investments in loans provided to governments, companies, and other borrowers.
Infrastructure	Investments in real assets including bridges, toll roads, utilities, and airports.

- ¹¹ Public companies use all sources of capital to create and sustain jobs, not just CalPERS investment.
- ¹² The global fixed income employment figure of 268,000 workers is based on publicly available data for this asset class, which was available for 21 companies that received direct corporate bond investment from CalPERS. These 21 companies are also present in CalPERS public equity portfolio. Job estimates cannot be combined, as this would constitute double counting.
- ¹³ According to data from Thomson Reuters analyzing all private equity transactions between 2002 and 2011, nearly 95 percent of all private equity in California has been committed to 6 percent of California ZIP codes.
- ¹⁴ Definitions to the areas where private market investment may be especially socially beneficial are listed below:

High Unemployment:
The State of California Employment

Training Panel (ETP) defines high unemployment areas as being 25 percent higher than the state average, if the state's average unemployment rate is less than 10 percent.

As of March 13, 2017, California average unemployment rate was 5.1 percent; therefore any ZIP code with an unemployment rate above 6.4 percent is considered a High Unemployment Area, see ETP High Unemployment Areas available at <https://www.etp.ca.gov/Program-Info/High-Unemployment-Areas.aspx> for more information.

Rural:

Rural areas are ZIP codes in which the percent of the rural population is more than the median percent of the rural population in all California ZIP codes (above 3.67 percent). See "Advancing Rural America," U.S. Small Business Administration (SBA) Office of Advocacy, available at www.sba.gov/advo/research/rural_sb.html.

According to the SBA, rural business access to capital has historically been limited. Future access to capital may be constrained further as bank mergers replace community banks with larger entities that are less interested in non-credit card small-sized loans.

High Minority:

High Minority Areas are ZIP codes in which the percent of the minority population is more than the median percent of the minority population in all California ZIP codes (above 24 percent). See "MBDA Study Finds Capital Access Remains Major Barrier to Success for Minority-Owned Firms" for more information on access to capital in minority communities. U.S. Department of Commerce Minority Business Development Agency, January 29, 2010, available at <http://www.mbdba.gov/pressroom/press-releases/mbda-study-finds-capital>.

LMI:

Low-to Moderate-Income (LMI) Areas are predominantly (50 percent or more) composed of LMI residents (46 percent of U.S. ZIP codes fall into this category). A

Endnotes (continued)

census tract is determined to be LMI when:

- Median income of the tract is at or less than 80 percent of the metropolitan statistical area median or less than 80 percent of the statewide, non-metropolitan area median income.
- At least 20 percent of the population lives in poverty.
- The unemployment rate is at least 1.5 times the national average (based on US Census Bureau and 2006-2010 American Community Survey data, consistent with research on the California Initiative. 1.5 times the 2006-10 national average of 6.8 percent is 10.2 percent).

Limited Capital Access:

According to data from Thomson Reuters analyzing all private equity transactions between 2002 and 2011, nearly 95 percent of all private equity in California has been committed to 6 percent of California ZIP codes. ZIP codes not included in this 6 percent are considered Limited Capital Access Areas.

¹⁵ "Total Jobs Created since Investment" represents net jobs created for the entire California Initiative portfolio and aggregates job losses and gains at both active and exited portfolio companies.

Data and Methodology

I. Data

The data used for this study comes from two sources, myCalPERS retirement data and IMPLAN. The retirement data includes monthly gross allowances for benefit recipients who resided in California in FY 2015-16 (July 1, 2015 through June 30, 2016). The population examined in this study includes California benefit recipients from four retirement systems that CalPERS administers: Public Employees' Retirement System (PERS), Legislators' Retirement System (LRS), Judges' Retirement System (JRS), and JRS II. The economic impacts for the overall state, counties, and legislative districts were also analyzed. This report only summarizes statewide and a few regional impacts. Results for California's counties and legislative districts can be viewed here: <https://www.calpers.ca.gov/page/about/organization/facts-at-a-glance/economic-impacts-ca>.

II. Methodology

This study measures the economic impacts of CalPERS benefit payments using IMPLAN, an input-output modeling software that measures the regional or local effects given a change in economic activity. IMPLAN is widely used by governments, universities, and public and private sector organizations to assess the economic impact of projects in many industry sectors. IMPLAN compiles data from several federal data sources in order to assess the impact of an infusion of income spread throughout a local economy. IMPLAN uses a Social Accounting Matrix (SAM) to capture all industry transactions in a local economy. The SAM describes a local economy in terms of the flow of dollars within a region while also accounting for non-industry related transactions including tax payments by businesses and households.

This study utilizes IMPLAN's updated Regional Purchasing Coefficients, known as the Trade Flows model, and the household income activity to calculate the economic impacts of CalPERS benefit payments. According to IMPLAN, the Regional Purchasing Coefficients (RPCs) represents the proportion of each dollar (local demand) for a given commodity that is purchased locally. Higher RPCs indicate less leakage and larger input-output multipliers. Prior to development of the Trade Flows model, IMPLAN Group used a set of econometric equations to estimate RPCs for each shippable commodity. According to IMPLAN, the econometric RPC methodology and assumptions have not been updated since its initial inception. The Trade Flows model is a superior method for calculating regional economic impacts because Trade Flows account for the proximity and size of alternative markets. In general, Trade Flows will have larger multipliers due to improved regional modeling and because leakage across geographical area is better captured.

Additionally, to estimate the economic impacts at the county-level, staff conducted a Multi-Regional Input-Output (MRIO) analysis. MRIO models account for multi-regional differences across counties, leakage caused by inter-county commerce, and spending patterns across all households rather than fixed expenditure patterns. Due to data limitations, MRIO models only apply to county-level analyses. MRIO analyses for geographical areas smaller than county regions (i.e., ZIP codes) produce less reliable results.

Lead Researcher:

Stephanie Tuttle

Contributors:

Kyle Harris

Kari Yoshizuka

Valerie Wong

Jan Falzarano

Jie Zhou

Erik Bell

Aron Womack

Matt Facer

The Retirement Research and Planning Division would like to thank David Merwin, Amy Morgan, Tara Gallegos, and Elaine Yamaguchi for their valuable comments.

For more information on the study "CalPERS for California 2016," visit www.calpers.ca.gov

For questions about this report, contact the CalPERS Office of Communications & Stakeholder Relations at (916) 795-3991 or newsroom@calpers.ca.gov



**California Public Employees'
Retirement System**
400 Q Street
P.O. Box 942701
Sacramento, CA 94229-2701
www.calpers.ca.gov

Produced by CalPERS Office of Communications
& Stakeholder Relations with CalPERS
Retirement Research and Planning Division

July 2017.08.10